In the Claims:

Please amend Claims 19, 37, 43, 49, 55 and 61; and add new Claims 67-72, all as shown below. Applicant reserves the right to prosecute any originally presented claims in a continuing or future application. All pending claims in the Application are reproduced below, including those that remain unchanged by this Response.

1-18.   (Canceled).

19.   (Currently Amended) An interactive data analysis system, comprising:

a display device for two-dimensional display of data having a first variable and a second variable;

a data retrieval mechanism for retrieving data and displaying it as a data display on said display device, wherein said data display is one of a scatter plot or contour plot of said data;

image display instructions for overlaying upon said data display an interactive analysis tool, said image display instructions include instructions for generating a data display region, an active axis mapped to a variable component of said data, and a focus region defining a subset of said data display region; and,

display object generation logic for mapping, via a mapping operation, the data within said focus region to one of a plurality of display objects in said active axis; and,

a user input mechanism for inputting instructions to said data analysis system to modify the operation of said focus region, said modification causes said display object generation logic to again map said data within said focus region to one of a single or plurality of display objects in said active axis.

20.   (Original) The system of claim 19 wherein said interaction with said active axis allows said mapping operation to be modified to perform an alternate mapping of said active axis to said first variable component, and to modify the focus region of said data pane.

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21.　(Original) The system of claim 19 wherein said data pane image includes a first active axis along a first axis of said plot mapped to a first variable component of said data, and a second active axis along a second axis of said plot mapped to a second variable component of said data.

22..　(Original) The system of claim 19 further comprising:

instructions for scratching within said data pane image, allowing a user to move a cursor over data displayed within the data pane image, said movement causes said focus area to be enlarged.

23.　(Original) The system of claim 19 further comprising:

instructions for bumping within said data pane image, allowing a user to replace a first mapping operation associated with said active axis with a second mapping operation and to toggle the display of the effect of said mapping operations from a first to a second operation.

24.　(Original) The system of claim 19 further comprising:

an attribute slider, for replacing the display of said first and said second attribute with said third attribute.

25-36. (Canceled).

37.　(Currently Amended) A system for interactive data analysis, comprising:

a display device for displaying a set of data as a two-dimensional data plot, wherein said data plot is one of a scatter plot or contour plot of said data;

a data pane image generation logic for overlaying a data pane image with said two-dimensional data plot, said data pane image includes a focus region, wherein said data pane image generation logic further includes instructions for mapping data displayed within said focus region to one or more display objects to be displayed in conjunction with said data pane image; and

a user input device for inputting instructions to said data pane image generation logic to interact with and control the operation of said focus region.

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38.   (Previously Presented) The system of claim 37 wherein each data item of said two-dimensional plot includes a first variable component and a second variable component, and wherein said data pane image includes an active axis mapped to a first variable component of said data and wherein interaction with said active axis allows said mapping operation to be modified to perform an alternate mapping of said active axis to said first variable component.

39.   (Previously Presented) The system of claim 38 wherein said data pane image includes a first active axis along a first axis of said plot mapped to a first variable component of said data, and a second active axis along a second axis of said plot mapped to a second variable component of said data.

40.   (Previously Presented) The system of claim 37 further comprising:
        means for scratching within said data pane image, allowing a user to move a cursor over data displayed within the data pane image and cause said focus area to be enlarged.

41.   (Previously Presented) The system of claim 37 further comprising:
        means for bumping within said data pane image, allowing a user to toggle the display of the effect of said mapping operations from a first to a second operation.

42.   (Previously Presented) The system of claim 38 further comprising:
        an attribute slider for selecting a third variable component associated with said data item, and replacing the display of said first and said second attribute with said third attribute.

43.   (Currently Amended) A system for interactive data analysis, comprising a processor-based machine including a memory and instructions stored therein for:
        retrieving a set of source data to be analyzed;
        displaying said set of source data as a two-dimensional data plot, wherein said data plot is one of a scatter plot or contour plot of said data;

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overlaying a data pane image in combination with said two-dimensional data plot, said data pane image includes an active axis mapped to a first component variable of said data and a focus region defining a subset of said two-dimensional data plot;

mapping, using a mapping operation, source data within said focus region to one or more display objects;

displaying said display objects in said data pane image;

receiving input from a user to interact with said active axis and to reposition said focus region to a second focus region; and

regenerating said data pane image and said display objects to represent a subset of source data displayed within said second focus region.

44.   (Previously Presented) The system of claim 43 wherein said interaction with said active axis allows said mapping operation to be modified to perform an alternate mapping of said active axis to said first variable component.

45.   (Previously Presented) The system of claim 43 wherein said data pane image includes a first active axis along a first axis of said plot mapped to a first variable component of said data, and a second active axis along a second axis of said plot mapped to a second variable component of said data.

46.   (Previously Presented) The system of claim 43 further comprising:

instructions for scratching within said data pane image, allowing a user to move a cursor over data displayed within the data pane image and cause said focus area to be enlarged.

47.   (Previously Presented) The system of claim 43 further comprising:

instructions for bumping within said data pane image, allowing a user to replace a first mapping operation associated with said active axis with a second mapping operation and to toggle the display of the effect of said mapping operations from a first to a second operation.

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48.   (Previously Presented) The system of claim 43 further comprising:

an attribute slider for replacing the display of said first and said second attribute with said third attribute.

49.   (Currently Amended) A system for allowing a user to interactively analyze data, including a processor-based machine having a memory, said memory including instructions for:

retrieving items of data from a data storage device;

displaying said data as a two-dimensional plot upon a display device, wherein said plot is one of a scatter plot or contour plot of said data;

overlaying a data pane window upon said data, said data pane window including a focus area; and

allowing a user to examine said data via an input device that controls the position of said focus area, wherein moving the focus area to a position within said data pane causes the data represented within said focus area to be retrieved from said memory, and mapped using a mapping operation to a plurality of display objects for display within said data pane window.

50.   (Previously Presented) The system of claim 49 wherein said data pane window includes an active axis mapped to a component variable of said data and wherein interaction with said active axis allows said mapping operation to be modified to perform an alternate mapping of said active axis to said first variable component, and to modify the focus region of said data pane.

51.   (Previously Presented) The system of claim 50 wherein said data pane image includes a first active axis along a first axis of said plot mapped to a first variable component of said data, and a second active axis along a second axis of said plot mapped to a second variable component of said data.

52.   (Previously Presented) The system of claim 49 further comprising:

instructions for scratching within said data pane image, allowing a user to move a cursor over data displayed within the data pane image, said movement causes said focus area to be enlarged.

53.   (Previously Presented) The system of claim 49 further comprising:

instructions for bumping within said data pane image, allowing a user to replace a first mapping operation associated with said active axis with a second mapping operation and to toggle the display of the effect of said mapping operations from a first to a second operation.

54.   (Previously Presented) The system of claim 51 further comprising:

an attribute slider for replacing the display of said first and said second attribute with said third attribute.

55.   (Currently Amended) A method of allowing a user to interactively analyze data, comprising the steps of:

retrieving a set of source data to be analyzed;

displaying said set of source data as a two-dimensional data plot, wherein said data plot is one of a scatter plot or contour plot of said data;

overlaying a data pane image in combination with said two-dimensional data plot, said data pane image includes a focus region defining a subset of said two-dimensional data plot;

mapping, using a mapping operation, source data within said focus region to one or more display objects;

displaying said display objects in said data pane image; and

receiving input from a user to interact with or reposition said focus region to a second focus region, regenerating said data pane image, and said display objects to represent a subset of source data displayed within said second focus region.

56.   (Previously Presented) The method of claim 55 wherein said data pane image includes an active axis mapped to a first component variable of said data and wherein interaction with said

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active axis allows said mapping operation to be modified to perform an alternate mapping of said active axis to said first variable component, and to modify the focus region of said data pane.

57.   (Previously Presented) The method of claim 56 wherein said data pane image includes a first active axis along a first axis of said plot, said first active axis mapped to a first variable component of said data, and a second active axis along a second axis of said plot, said second active axis mapped to a second variable component of said data.

58.   (Previously Presented) The method of claim 56 further comprising:

instructions for scratching within said data pane image, allowing a user to move a cursor over data displayed within the data pane image, said movement of said cursor causes an interaction with said active axis to affect the mapping operation, and causes said focus area to be enlarged.

59.   (Previously Presented) The method of claim 56 further comprising:

instructions for bumping within said data pane image, allowing a user to replace a first mapping operation associated with said active axis with a second mapping operation, and to toggle the display of the effect of said mapping operations from a first to a second operation.

60.   (Previously Presented) The method of claim 57 further comprising:

an attribute slider, said instructions select a third variable component associated with said data item, and replaces the display of said first and said second attribute with said third attribute.

61.   (Currently Amended) A method of allowing a user to interactively analyze data, comprising the steps of:

retrieving items of data from a data storage device;

displaying said data as a two-dimensional plot upon a display device, wherein said data plot is one of a scatter plot or contour plot of said data;

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overlaying a data pane window upon said data, said data pane window includes a focus area; and

allowing a user to examine said data via an input device that controls the position of said focus area, wherein moving the focus area to a position within said data pane causes the data represented within said focus area to be retrieved from said memory, and mapped using a mapping operation to a plurality of display objects, for display within said data pane window.

62.   (Previously Presented) The method of claim 61 wherein said data pane window includes an active axis mapped to a component variable of said data and wherein interaction with said active axis allows said mapping operation to be modified to perform an alternate mapping of said active axis to said first variable component, and to modify the focus region of said data pane.

63.   (Previously Presented) The method of claim 62 wherein said data pane image includes a first active axis along a first axis of said plot, said first active axis mapped to a first variable component of said data, and a second active axis along a second axis of said plot, said second active axis mapped to a second variable component of said data.

64.   (Previously Presented) The method of claim 62 further comprising:

instructions for scratching within said data pane image, allowing a user to move a cursor over data displayed within the data pane image, said movement of said cursor causes an interaction with said active axis to affect the mapping operation, and causes said focus area to be enlarged.

65.   (Previously Presented) The method of claim 62 further comprising:

instructions for bumping within said data pane image, allowing a user to replace a first mapping operation associated with said active axis with a second mapping operation, and to toggle the display of the effect of said mapping operations from a first to a second operation.

66.   (Previously Presented) The method of claim 63 further comprising:

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an attribute slider, said instructions select a third variable component associated with said data item, and replaces the display of said first and said second attribute with said third attribute.

67.   (New) An interactive data analysis system, comprising:

a display device for two-dimensional display of data having a first variable and a second variable;

a data retrieval mechanism for retrieving data and displaying it as a data display on said display device;

image display instructions for overlaying upon said data display an interactive analysis tool, said image display instructions include instructions for generating a data display region, an active axis, and a focus region defining a subset of said data display region;

display object generation logic for mapping, via a mapping operation, the data within said focus region to one of a plurality of display objects in said active axis;

a user input mechanism for inputting instructions to said data analysis system to modify the operation of said focus region, said modification causes said display object generation logic to again map said data within said focus region to one of a single or plurality of display objects in said active axis; and

instructions for bumping within said data pane image, allowing a user to replace a first mapping operation associated with said active axis with a second mapping operation and to toggle the display of the effect of said mapping operations from a first to a second operation.

68.   (New) An interactive data analysis system, comprising:

a display device for two-dimensional display of data having a first variable and a second variable;

a data retrieval mechanism for retrieving data and displaying it as a data display on said display device;

image display instructions for overlaying upon said data display an interactive analysis tool, said image display instructions include instructions for generating a data display region, an active axis, and a focus region defining a subset of said data display region;

display object generation logic for mapping, via a mapping operation, the data within said focus region to one of a plurality of display objects in said active axis;

a user input mechanism for inputting instructions to said data analysis system to modify the operation of said focus region, said modification causes said display object generation logic to again map said data within said focus region to one of a single or plurality of display objects in said active axis; and

an attribute slider, for replacing the display of said first and said second attribute with said third attribute.

69. (New) A system for interactive data analysis, comprising:

a display device for displaying a set of data as a two-dimensional data plot;

a data pane image generation logic for overlaying a data pane image with said two-dimensional data plot, said data pane image includes a focus region, wherein said data pane image generation logic further includes instructions for mapping data displayed within said focus region to one or more display objects to be displayed in conjunction with said data pane image;

a user input device for inputting instructions to said data pane image generation logic to interact with and control the operation of said focus region; and

means for bumping within said data pane image, allowing a user to toggle the display of the effect of said mapping operations from a first to a second operation.

70. (New) A system for interactive data analysis, comprising:

a display device for displaying a set of data as a two-dimensional data plot;

a data pane image generation logic for overlaying a data pane image with said two-dimensional data plot, said data pane image includes a focus region, wherein said data pane image generation logic further includes instructions for mapping data displayed within said focus region to one or more display objects to be displayed in conjunction with said data pane image;

a user input device for inputting instructions to said data pane image generation logic to interact with and control the operation of said focus region;

wherein each data item of said two-dimensional data plot includes a first variable component and a second variable component, and wherein said data pane image includes an active axis mapped to a first variable component of said data and wherein interaction with said active axis allows said mapping operation to be modified to perform an alternate mapping of said active axis to said first variable component; and

wherein the system further comprises an attribute slider for selecting a third variable component associated with said data item, and replacing the display of said first and said second attribute with said third attribute.

71.   (New) A method of allowing a user to interactively analyze data, comprising the steps of:
        retrieving items of data from a data storage device;
        displaying said data as a two-dimensional plot upon a display device;
        overlaying a data pane window upon said data, said data pane window includes a focus area;
        allowing a user to examine said data via an input device that controls the position of said focus area, wherein moving the focus area to a position within said data pane causes the data represented within said focus area to be retrieved from said memory, and mapped using a mapping operation to a plurality of display objects, for display within said data pane window;
        wherein said data pane window includes an active axis mapped to a component variable of said data and wherein interaction with said active axis allows said mapping operation to be modified to perform an alternate mapping of said active axis to said first variable component, and to modify the focus region of said data pane; and
        wherein the method further comprises allowing for bumping within said data pane image, allowing a user to replace a first mapping operation associated with said active axis with a second mapping operation, and to toggle the display of the effect of said mapping operations from a first to a second operation.

72.   (New) A method of allowing a user to interactively analyze data, comprising the steps of:
        retrieving items of data from a data storage device;

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displaying said data as a two-dimensional plot upon a display device;

overlaying a data pane window upon said data, said data pane window includes a focus area;

allowing a user to examine said data via an input device that controls the position of said focus area, wherein moving the focus area to a position within said data pane causes the data represented within said focus area to be retrieved from said memory, and mapped using a mapping operation to a plurality of display objects, for display within said data pane window;

wherein said data pane window includes an active axis mapped to a component variable of said data and wherein interaction with said active axis allows said mapping operation to be modified to perform an alternate mapping of said active axis to said first variable component, and to modify the focus region of said data pane;

wherein said data pane image includes a first active axis along a first axis of said plot, said first active axis mapped to a first variable component of said data, and a second active axis along a second axis of said plot, said second active axis mapped to a second variable component of said data; and

wherein the method further comprises providing an attribute slider that allows for selecting a third variable component associated with said data item, and replaces the display of said first and said second attribute with said third attribute.

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